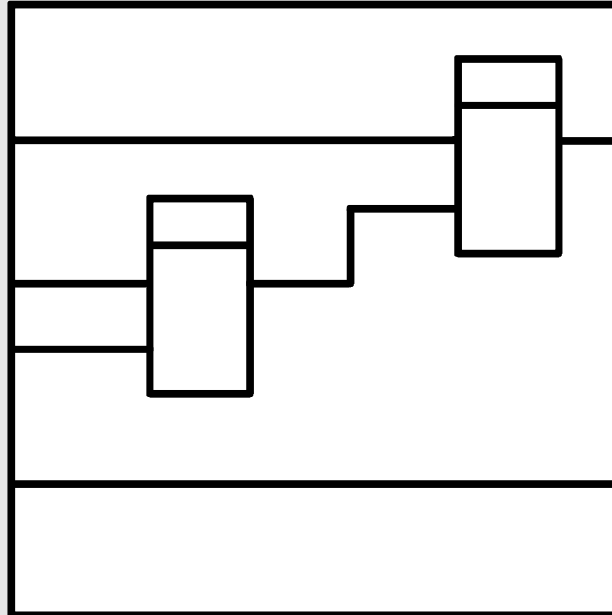


SIMADYN D Digital Control System

User Manual

Interface Board SS3/31



Edition		Status
1	Interface Board SS3/31	05.95

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We have checked the contents of this Manual to ensure that they coincide with the described hardware and software. However, deviations cannot be completely ruled-out, so we cannot guarantee complete conformance. However, the information in this document is regularly checked and the necessary corrections included in subsequent editions. We are thankful for any recommendations or suggestions.

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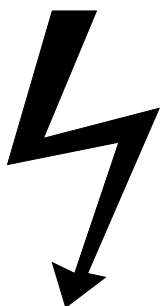
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NOTE !

The information in this Manual does not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met in connection with installation, operation or maintenance.

Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, please contact your local Siemens office.

Further, the contents of this Manual shall not become a part of or modify any prior or existing agreement, commitment or relationship. The sales contract contains the entire obligation of Siemens. The warranty contained in the contract between the parties is the sole warranty of Siemens. Any statements contained herein do not create new warranties nor modify the existing warranty.

Warning information**WARNING !**

Electrical equipment has components which are at dangerous voltage levels.

If these instructions are not strictly adhered to, this can result in severe bodily injury and material damage.

Only appropriately qualified personnel may work on this equipment or in its vicinity.

This personnel must be completely knowledgeable about all the warnings and service measures according to this User Manual.

The successful and safe operation of this equipment is dependent on proper handling, installation, operation and maintenance.

Definitions

* **QUALIFIED PERSONNEL**

For the purpose of this User Manual and product labels, a „Qualified person“ is someone who is familiar with the installation, mounting, start-up and operation of the equipment and the hazards involved. He or she must have the following qualifications:

1. Trained and authorized to energize, de-energize, clear, ground and tag circuits and equipment in accordance with established safety procedures.
2. Trained in the proper care and use of protective equipment in accordance with established safety procedures.
3. Trained in rendering first aid.

* **DANGER**

For the purpose of this User Manual and product labels, „Danger“ indicates death, severe personal injury and/or substantial property damage will result if proper precautions are not taken.

* **WARNING**

For the purpose of this User Manual and product labels, „Warning“ indicates death, severe personal injury or property damage can result if proper precautions are not taken.

* **CAUTION**

For the purpose of this User Manual and product labels, „Caution“ indicates that minor personal injury or material damage can result if proper precautions are not taken.

* **NOTE**

For the purpose of this User Manual, „Note“ indicates information about the product or the respective part of the User Manual which is essential to highlight.

	CAUTION! This board contains components which can be destroyed by electrostatic discharge. Prior to touching any electronics board, your body must be electrically discharged. This can be simply done by touching a conductive, grounded object immediately beforehand (e.g. bare metal cabinet components, socket protective conductor contact).
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	WARNING! Hazardous voltages are present in this electrical equipment during operation. Non-observance of the safety instructions can result in severe personal injury or property damage. It is especially important that the warning information in all of the relevant Operating Instructions are strictly observed.
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1. Ordering information

- SS3 interface board	MLFB	6DD 1688-1AC0
- SS31 interface board	MLFB	6DD 1688-1AC1

2. Function description

The SS3 and SS31 hybrid boards, convert the serial data transfer signals from a logical TTL/CMOS signal level to differential signals according to EIA485 (RS485). The boards are used in the SIMADYN D processor and interface boards.

The hybrid interface boards are located in a DIL40 socket on the appropriate processor- or interface board.

3. Design

- * Thick-film integrated circuit
- * 40-pin dual-in-line
- * EIA-485 (RS485) transmitter and receiver

4. Application

The SS31 is used in the processor- and interface boards to create an RS485 bus.

The SS3 interface board is only used in the PM16 to create a DUST 4 coupling.

For the SS3 board, the transmit driver is always activated via the operating voltage. For the SS31 board, the transmitter is activated via the RTS signal. Further, the SS3 board has, contrary to the SS31 board, a terminating resistor in the receive line (between pin 30, RxD + pin 31 RxD)

5. Technical data

INSULATION GROUP	acc. to VDE 0110, pollution level 2
AMBIENT TEMPERATURE	0 ... 55 degrees C
STORAGE TEMPERATURE	-40...70 degrees C
HUMIDITY CLASS	F acc. to DIN 40040
DIMENSIONS	50.8 x 18.6 x 9.0
SUPPLY VOLTAGE	5V ± 5%
RATED CURRENT DRAIN	90 mA
DATA TRANSMISSION RATE	up to 1 Mbaud

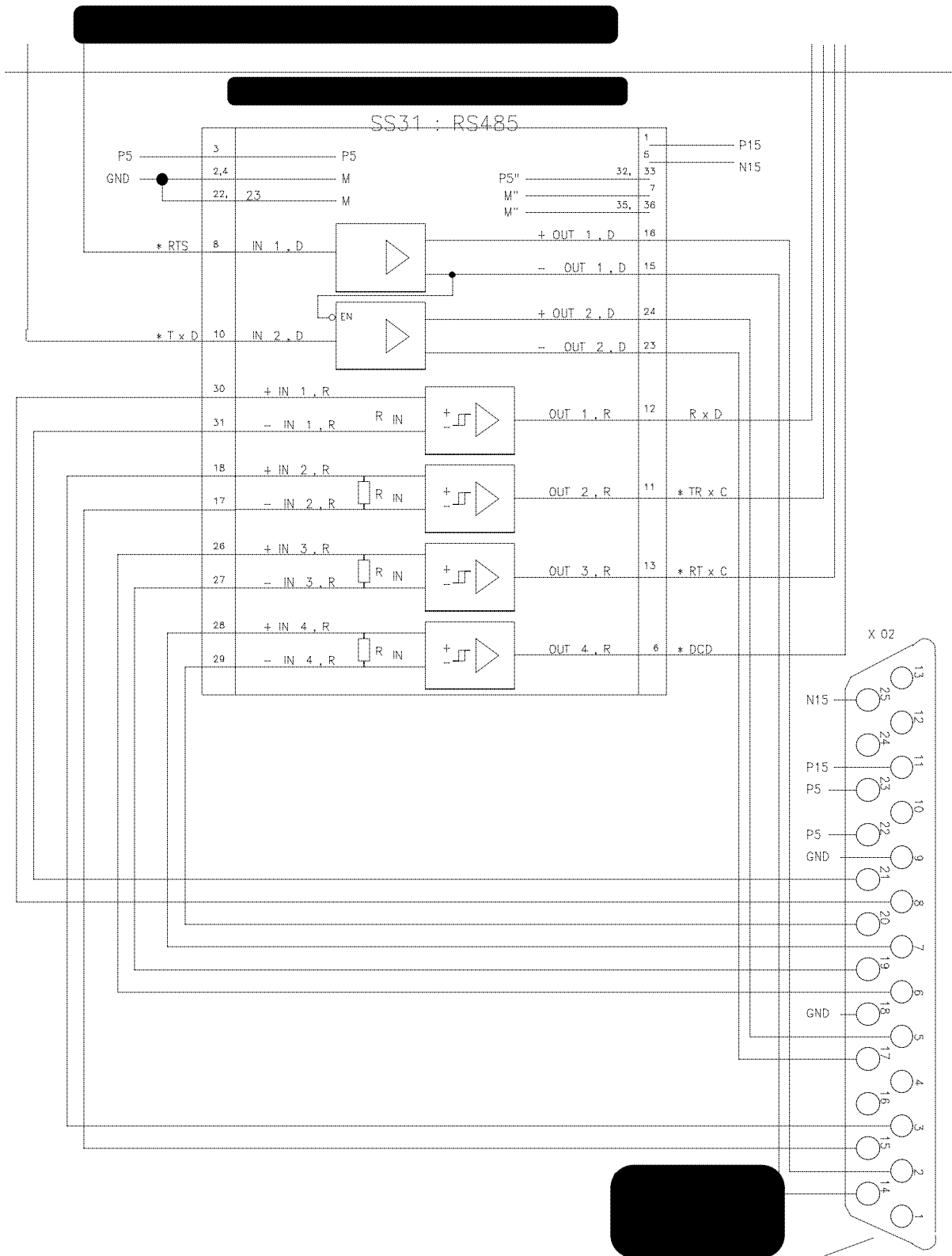
6. Pin assignment

Pin No. SS3/SS31 .	Function	Pin No. PM16, X02
1	n.c.	11
2	0V	9
3	5V	22
4	0V	18
5	n.c.	25
6	DCD	-
7	0V	-
8	RTS	-
9	n.c.	-
10	TxD	-
11	TRxC	-
12	RxD	-
13	RTxC	-
14	n.c.	-
15	-RTS	14
16	+RTS	2
17	-TRxC	15
18	+TRxC	3
19	n.c.	16
20	n.c.	4
21	0V	9
22	0V	18
23	-TxD	17
24	+TxD	5
25	n.c.	-
26	+RTxC	6
27	-RTxC	19
28	+DCD	7
29	-DCD	20
30	+RxD	8
31	-RxD	21
32	5V	-
33	5V	-
34	n.c.	10
35	0V	-
36	0V	-
37	n.c.	24
38	n.c.	12
39	n.c.	-
40	n.c.	13

7. Attachments

7.1. Block diagram

For the SS3 board, there is no line from the RTS driver to the TxD driver (enable). The SS3 transmit driver is always activated via the operating voltage. Further, the SS3 board has a terminating resistor between the RxD lines (between pins 30 and 31). Otherwise, the block diagram of the SS3 is identical with that of the SS31.



7.2. Dimension drawing

The SS3 board has the same dimensions as the SS31 board. Thus, only the SS31 board dimension drawing is attached.

Dimension drawing

3SE.465688.9102.10 MB

8. ESD instructions

Components which can be destroyed by electrostatic discharge (ESD)

Generally, electronic boards should only be touched when absolutely necessary.

The human body must be electrically discharged before touching an electronics board. This can be simply done by touching a conductive, grounded object beforehand (e.g. bare metal cubicle components, socket outlet protective conductor contact).

Boards must not come into contact with highly-insulating materials - e.g. plastic foils, insulated desktops, articles of clothing manufactured from man-made fibers.

Boards must only be placed on conductive surfaces.

When soldering, the soldering iron tip must be grounded.

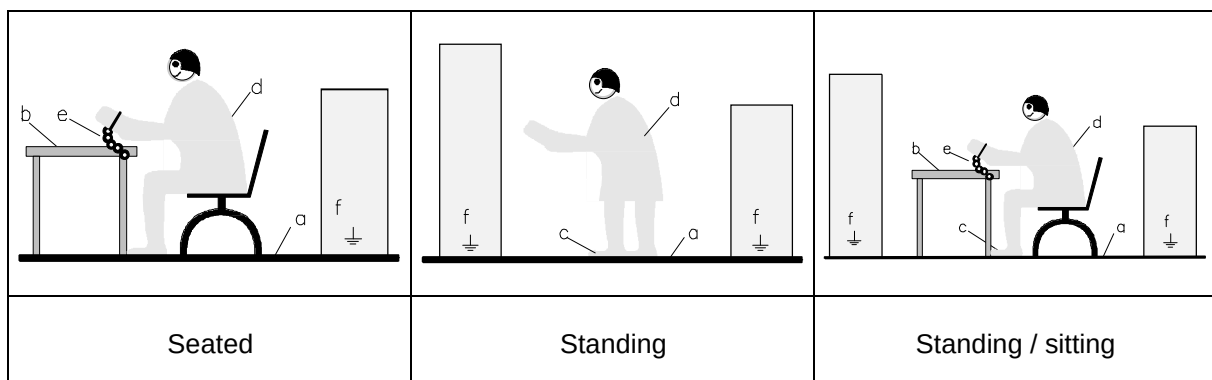
Boards and components should only be stored and transported in conductive packaging (e.g. metalized plastic boxes, metal containers).

If the packing material is not conductive, the boards must be wrapped with a conductive packing material, e.g. conductive foam rubber or household aluminum foil.

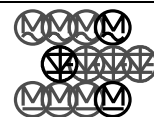
The necessary ESD protective measures are clearly shown in the following diagram.

a = Conductive floor surface
b = ESD table
c = ESD shoes

d = ESD overall
e = ESD chain
f = Cabinet ground connection



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